

GCOOS Update

Spring Board and Members Meeting

November 8, 2024



Jorge Brenner
Executive Director



Our Mission

To provide on-demand information about the Gulf's coastal and open ocean waters that is accurate, reliable and benefits people, ecosystems and the economy



TEXAS A&M
UNIVERSITY.



Board of Directors

THANK YOU!

Private Sector



Dr. Alyssa Deusman
The Weather Institute of the Gulf
VPI of Science
Board term expires in 2024



Bill Lingsch
Past Board Chair
Board term expires in 2024



David Driver
BP (retired)
Board term expires in 2024



Dr. Ruth Perry
Shell Exploration & Production
Company
Board term expires in 2025



Jan van Smirren
(Treasurer)
Oil Water and Environment and
Ocean Bank, LLC

Academic Sector



Dr. Antonietta Guigg
Texas A&M University at
Galveston
Board term expires in 2026



Dr. Stephan Howden
(Secretary)
University of Southern
Maine



Dr. Nick Shay
University of Miami, RSMAS
Board term expires in 2024

Outreach and Education Sector



Suraida Nafiez-James
Gulf Beach Institute
Board term expires in 2026



Dr. Sara Graves
University of Alabama Huntsville
Board term expires in 2026



Joe Swaykos
(Immediate Past Chair)
National Data Buoy Center
(Retired Coast Scientist)



Dr. Nan Walker
Louisiana State University
Board term expires in 2025

Government Sector



Thomas Wissing
U.S. Naval Oceanographic Office
Board term expires in 2025



Dr. Kate Hubbard
Florida Fish and Wildlife
Conservation Commission-Fish
and Wildlife Research Institute



Dr. Kimberly Yates
U.S. Geological Survey
Board term expires in 2026



Dr. Pat Hogan
NOAA/NCEI - MS
Board term expires in 2025



Kirsten Larsen (Chair)
NOAA/NCEI

Board Updates: Retiring Directors



O&E Sector: Joe Swaykos

Immediate Past Chair – Retired, NDBC Chief Scientist



Private: Bill Lingsch

Past Board Chair – IOOS and Retired, US NAVY



Private Sector: Dr. Alyssa Dausman

VP of Science – The Water Institute of the Gulf

Board Updates: New Directors



Private Sector: Dr. Emily Hall

Senior Scientist and Program Manager – Mote Marine Laboratory



Private: Dr. Rafael Ramos

Regional Manager and Senior Oceanographer – Woods Hole Group



O&E Sector: Dr. Brian Roberts

Executive Director and Chief Scientist – LUMCON

Staff Updates



Jerad King

- New GIS Manager



Dr. Renata Kamakura

- New GRP-NAS Policy Fellow

2024 Budget

IOOS:

- Main award year 3: \$3.6M (Core \$2.4M + add-ons \$1.1M)
- DS - Repair and Replace year 2: \$313,070 (ends August 2024) in NCE
- DS - Gliders year 2: \$366,538 (ends August 2025)
- BIL1 – Modernization year 2: \$587,000 (ends December 2024) (NCE requested)

Other – new:

- LSU - NOAA HFR network year 1: \$40,000 (ends August 2028)

New IOOS:

- Main award year 4: \$4.1M (Core \$2.4M + add-ons \$1.7M)
- IRA TA1 year 1: \$1,295,303 (wo FGBNMS holdback) (ends July 2029)
- IRA TA2 year 1: \$586,369 (wo USGS holdback) (ends July 2029)
- DS – Repair and Replace H. Ian year 1: \$233,953 (ends August 2026)
- CIROH AI water level year 1: \$150,000 (ends August 2026)

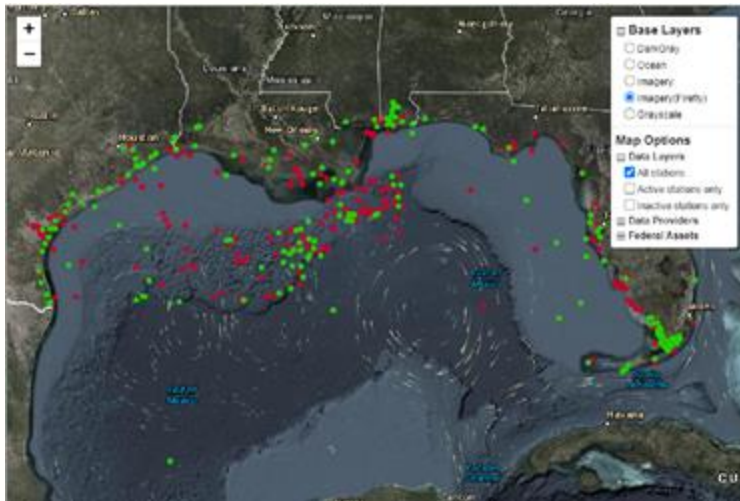
Data Portal: NTL

From a year ago, 10 new stations added (9 from the BSEE/NTL registry, and 1 from DISL). New data from Mexico expected to be processed soon.

7 Tb of data in entire project

NTL data records since 01 Jan 2024 to now:

- * Water temperature= 2,156,016
- Ocean currents = 119,761,635
- Record was broken in August 0.5B observations



New stations in last 6 months:

name	description	organization
42891	42891 - West Vela - GC944	Beacon
42892	42892 - Saipem Santorini - Mississippi Canyon 771 #5 ST2	ENI
42G01	42G01 - Deepwater Titan - MC937	Chevron
42874	Deepwater Asgard RigADCP GC 0287	Amerada Hess
42G02	42G02 - Noble Valiant - Atwater Valley 138	Murphy
42G03	42G03 - Anchor - Green Canyon 763	Chevron
42G05	42G05 - BP Atlantis - Green Canyon 787	BP
42G06	42G06 - Whale - AC 773	Shell
42G07	42G07 - Stena Evolution - M5657	Shell

Milestones:

- Syncing with BOEM registry completed
- All old data (raw/XML, CSV, NetCDF) are now TARED to save space, but not those that are served via ERDDAP services; this is now automated

Challenges

- Still some data configuration issues, resulting in failure to parse, process and publish data
- Processing delayed mode deliveries is a tedious task (redo parsing, NetCDF re-generation, CSV re-generation, test publication, then publication on ERDDAP and WAF)
- Projecting data storage requirements remains a challenge (data format changes, adding more sensors, delayed mode, etc)

Gliders: Season Summary

Institution	Number of Mission	Mission type	Sponsor	Project Name	Deployment	Recovery	Average wet days
GERG	3	Deep	Hurricane Supplement	GCOOS Hurricane intensification work	Summer-Fall	Summer-Fall	80
	1	Deep	IOOS main award	GCOOS Hurricane intensification work	Fall	Fall	40
	1	Deep	Navy	Hurricane intensification work	Fall	Fall	68
MML	4	Shallow	FWRI	FWRI Gulf Survey	Spring-Fall	Spring-Fall	17
	3	Shallow	IOOS main award	GCOOS Gulf	Winter-Spring	Winter-Spring	25
USF	4	Shallow	FWRI	FWRI Gulf Survey	Winter-Fall	Winter-Fall	27
	3	Shallow	GCOOS	GCOOS Gulf Survey	Spring-Fall	Spring-Fall	17
	1	Deep	Navy	Hurricane intensification work	07/11/2024	10/23/2024	104
USM	1	Deep	IOOS Main Award	GCOOS	Summer		102 to date
	4	Shallow	Hurricane Supplement	GCOOS Hurricane intensification work	Summer-Fall	Summer-Fall	15
	3	Deep	Navy	Hurricane intensification work	Summer-Fall	Summer-Fall	72
ULL	1	Deep	DoD/ONR	Storm Acoustic Reconnaissance	Fall		

Biological Data Mobilization

Dataset	Time Geographical Coverage	Data Provider
CREMP: Coral Benthic Coverage	1996 – ... Dry Tortugas, Florida Keys	Michael Colella FWC-FWRI
CAGES: Nekton from trawl Samples	1973 – 2007 Northern GoM Estuaries	James G. Ditty NOAA Fisheries Science Center
FGBNMS Coral Coverage + Fish	1991 – 2018 FGBNMS	James MacMillan, Marissa Nuttall NOAA
Juvenile Sportfish Survey	2004 – ... Florida Bay, Everglades	Christopher Kelble, Ian Smith NOAA
Zooplankton abundance	2015 – ... FKNMS	Ana Carolina Peralta USF
Phytoplankton abundance	2017 – ... Surfside Beach, TX	Lisa Campbell, Darren Henrichs TAMU
CTD cast data	2006 – ... Florida coastal region	Ian Smith NOAA
GoM SSH Anomaly (satellite)	2004 – ... GoM	Robert Leben University of Colorado Boulder
HFRadar radials, vectors	2004 – ... 2 stations in Yucatan	GERG at TAMU

Products: GANDALF 2.0

UG2 Workshop Results:

- 40+ attended working lunch
- Very few suggestions other than 'keep doing what you're doing'

On-going Enhancements:

- New visualization portal using ArcGIS
- Embedded LLM with RAG and Vectorstore
- All data stored in NetCDF format and hosted by ERDDAP
- Data store migrated to Amazon S3

Estimated Timeline:

- Beta Test Spring 2025
- Production Release Summer 2025

GCAN

Welcome GCAN's 2025 Steering Chair, Dr. Xinping Hu!



Xinping Hu is a professor at the University of Texas at Austin Marine Science Institute, which he joined in August of this year. Before this position, he had worked at Texas A&M University-Corpus Christi for 12 years, with the most recent four years serving as a research chair at the Harte Research Institute for Gulf of Mexico Studies within the university. He has spent the last 10 years working on the hydrological influence on estuarine carbon biogeochemistry and more recent years, ocean acidification in the northwestern Gulf of Mexico, in collaboration with Flower Garden Banks National Marine Sanctuary. His research on ocean acidification has mostly been funded by NOAA, NSF, and EPA, the latter through the Coastal Bend Bays and Estuaries Program.



Webinar Series:
building synergy across the U.S. MBON
and ocean acidification networks



Dr. Martin Hernandez Ayon, Investigator, del Instituto de Investigaciones Oceanologicas Universidad Autonoma de Baja California.

Dr. Frank Moller-Karger, Professor, Institute for Marine Remote Sensing/IMaRS, College of Marine Science, University of South Florida.

Topic: International Group on Earth Observations Biodiversity Observation Network (GEO BON) Geo Needs and Efforts

Noon to 1 p.m. ET | Thursday, Aug. 22

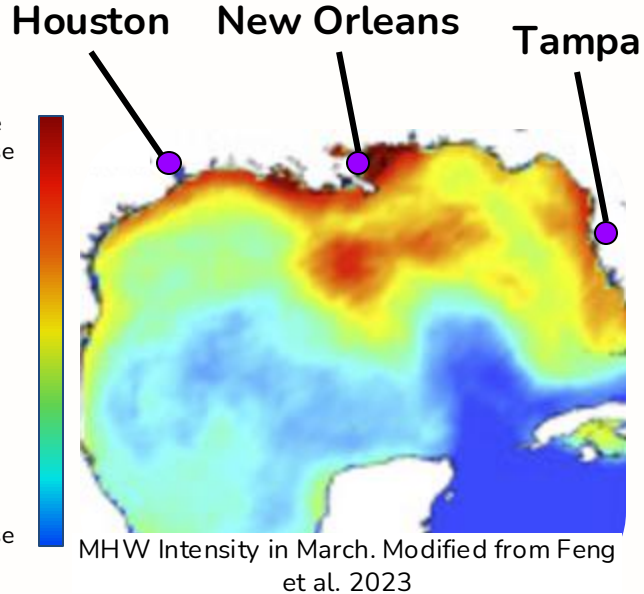


GCOOS & GCAN partnered with SECOORA, SOCAN & MBON to host 5 webinar events that partnered both OA and MBON experts to discuss OA effects on biological diversity in the GoM. The goal of this series was to provide a platform for dialog and collaboration between chemical and biological research communities. The series started in April and ended in August 2024.



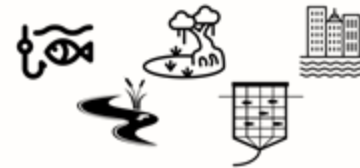
New Project: Marine Heat Waves

The Gulf of Mexico is experiencing more frequent and intense MHWs



To start off the project, we will:

- Bring in NAS GRP Science Policy Fellow (Dr. Ren Kamakura) and fund Ph.D. student at the USA/DISL (Dev Rao)
- Develop framework to identify the impacts of MHWs on fisheries, coastal ecosystems, and coastal climates
- Start outreach to stakeholders to learn what information about MHWs they need for management/adaptation
- Collaborate with other regional associations (CARICOOS, SECOORA), researchers, and local groups to expand our understanding of MHW impacts in the southeastern U.S. and Caribbean



Budget and Congress

July – Commerce, Science, Justice bill

House Appropriations Committee and Senate Appropriations Committee

	FY24	FY25
Authorization	\$54m	\$56m
Pres. Budget	\$42.5m	\$10m
House/Sen. bills	\$56m	\$42.5m
Enacted	\$42.5m	?

- House \$56 million (full amount of IOOS Ask)
- Senate \$43.5 million (1 million increase from FY24)
- Great news following proposed President's Budget of \$10 million

IOOSA sign-on letter to OMB

- 3 signatures GCOOS region

Coordination with IOOSA and ESP

- House champion for IOOS
- IOOS Reauthorization is next



New Projects in Year 4 of Main Award

NHABON

Title: **Validation and Monitoring of Holoplanktonic *Sargassum* along the Texas Coastal Bend**

Goal: Sargassum field observations in Texas coast and offshore

PI: Dr. Sharon Herzka, University of Texas – Marine Science Institute

Period: July 1, 2024 – June 30, 2025

Budget: \$78,130

HFR

Title: **Galveston Bay and Sabine Lake High Frequency Radar Networks: Repair Funds**

Goal: Repair high resolution HFR stations

PI: Dr. Chris Fuller, RATES Inc.

Period: July 1, 2024 – June 30, 2025

Budget: \$10,000

NOAA

Title: **Evaluation of Operational Modeling Frameworks and Model Coupling for Water Level Forecasting**

Goal: Build flexible and repeatable operational workflows for STOFS model

PI: Dr. Zach Cobell, The Water Institute

Period: July 1, 2024 – June 30, 2025

Budget: \$199,973

NRDA/NMFS

Title: **Sea Turtle Atlas**

Goal: Develop a restoration geospatial database

PI: Jorge Brenner, GCOOS

Period: July 1, 2024 – June 30, 2025

Budget: \$311,848



Additional New Projects

Repairs and Replace – Disaster Supplement

Title: **Repairs and Replacements of Marine Observational Asset Damaged during Hurricane Ian in 2022 in the Gulf of Mexico**

Goal: Repair damaged stations, buoy and PHySS during Hurricane Ian in 2022

Partners: Sanibel-Captiva Conservation Foundation, Mote Marine Lab (2 co-PIs)

Period: September 1, 2024 + 2 years

Budget: \$236,344

Inflation Reduction Act

Title: **Supporting Coastal Resilience with Inflation Reduction Act at GCOOS - RA**

Goal: Recapitalization and equitable service delivery for coastal resilience

Partners: 20 projects, 12 subawards, 6 new PI institutions

Period: August 1, 2024 + 5 years (will not renew after it ends)

Budget: \$8.2M (Topic 1 \$5M, Topic 2 \$3.2M)

Alabama Water Institute/CIROH – University of Alabama and NOAA CO-OPS

Title: **AI Methods for the Quality Control of Water Level Observations**

Goal: Develop an optimal Artificial Intelligence approach to quality control water level observations

Partners: TAMUCC

Period: July 1, 2024 + 2 years

Budget: \$300,000

New Proposals Submitted

Bipartisan Infrastructure Law (BIL)

Title: **Continue the Modernization and Recapitalization of the Gulf of Mexico Coastal Ocean Observing System**

Goal: Continue observation system recapitalization and modernization

Partners: USM, RATES Inc., FSU, USF, MML, USA, ULL, GERG (8 co-PIs)

Period: March 1, 2025 + 3 years

Budget: \$1,951,635

Next steps and 2025 Outlook

- Associate Director
- 20th Anniversary
- Strategic Plan
- BIL 2 (\$1.9M)
- New data platform
- New 5-yr funding proposal

THANK YOU



GCOOS Spring meeting in Galveston, TX